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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL V. CHOBOTOV and ROBERT G. WHIRLEY

Appeal 2009-013879
Application 10/691,849
Technology Center 3700

Before: WILLIAM F. PATE III, JENNIFER D. BAHR, and
STEFAN STAICOVICI, *Administrative Patent Judges*.

PATE III, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a rejection of claims 31-33, 35-38, 40-46, 48-54 and 56-65. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

The claims are directed to a system or kit for repairing the vasculature. Claim 31, reproduced below, is illustrative of the claimed subject matter:

> 31. A system for depositing an embolic material in a perigraft space between an endovascular graft and a body lumen wall, the system comprising:
>
> an endovascular graft comprising a generally tubular body having a proximal end and a distal end, a proximal inflatable cuff disposed at or near the proximal end of the body, a distal inflatable cuff disposed at or near the distal end of the body and an inflatable channel in fluid communication with the proximal and distal cuffs;
>
> a delivery device configured to access perigraft space between the endovascular graft and a body lumen wall;
>
> an occlusion assembly that is configured to substantially reduce a blood flow through the endovascular graft; and
>
> a curable embolic material that is delivered to the perigraft space with the delivery device, wherein the embolic material comprises polyethylene glycol diacrylate, pentaerythritol tetra 3(mercaptopropionate), and a buffer;
>
> wherein the polyethylene glycol diacrylate comprises a molecular weight between 700 and 800.

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Stack	US 5,059,211	Oct. 22, 1991
Studer	US 2005/0090901 A1	Apr. 28, 2005
Argentine	US 2005/0052946 A1	Mar. 10, 2005
Chobotov	US 2006/0224227 A1	Oct. 5, 2006
Vernon	US 2006/0263301 A1	Nov. 23, 2006
Vernon	60/465,376	Apr. 24, 2003

REJECTIONS

Claims 31, 33, 35, 36, 44-46, and 50-54 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Vernon, Chobotov, and Studer. Ans. 4.

Claim 32 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Vernon, Chobotov, Studer, and Stack. Ans. 6.

Claims 37, 38, 40-43, 48, 49 and 56-65 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Vernon, Chobotov, Studer and Argentine. Ans. 7.[1]

OPINION

We have carefully reviewed the rejections on appeal in light of the arguments of the Appellants and the Examiner. As a result of this review, we have reached the determination that the applied prior art establishes the prima facie obviousness of the claims on appeal. Therefore the rejections on appeal are affirmed. Our reasons follow.

As an initial matter, we agree with Appellants that the disclosure of the polyethylene glycol diacrylate or PEGDA, of a molecular weight of 570 as disclosed in the Vernon publication is unavailable to the Examiner, because the publication is dated after Appellants' filing date. This fact is not inimical to the Examiner's rejections, however, because the Vernon provisional application discloses repairing defects in the arteries and veins using a composition comprised of PEGDA. We acknowledge that no molecular weight is given in the provisional application.

Except for the disclosure in Vernon of PEGDA of the molecular weight of 570, which we expressly exclude, we adopt as our own the Examiner's findings of fact found on pages 4, 5, and 6 of the Examiner's Answer. Notably, we adopt the Examiner's finding that Studer teaches a composition containing PEGDA of a molecular weight of 700 for occluding and repairing cavities in vitro. Ans. 5. We agree with the Examiner's conclusion that it would have been obvious to use compositions comprising PEGDA with a molecular weight of 700 to repair arteries and veins as taught by Vernon. Ans. 5-6. This is merely the simple substitution of one known composition for another which would have yielded predictable results.

Except for claims 42, 52, and 56-63, which Appellants separately argue, Appellants' arguments are confined to whether Vernon and Studer would have taught one of ordinary skill to use PEGDA having a molecular weight of 700 in vascular repair. Appellants argue, alternatively, that Vernon does not disclose the use of PEGDA with a molecular weight of 700 or that Studer does not disclose repair of the vasculature with his disclosed

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[1] A rejection under 35 U.S.C. § 112, first paragraph, of claims 51, 52 and 63 was withdrawn by the Examiner on page 8 of the Answer.

composition containing PEGDA with a molecular weight of 700. App. Br. 11-12. We view these arguments as merely stating that the Examiner has not found an anticipatory reference. However, the rejection under consideration is under 35 U.S.C. § 103. "Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references." *In re Merck & Co.,* 800 F.2d 1091, 1097 (Fed. Cir. 1986) (*citing In re Keller,* 642 F.2d 413, 425 (CCPA 1981)).

Appellants argue that the rejection is based on impermissible hindsight. App. Br. 19. Repl. 3. We disagree. As the Examiner has found, Studer is reasonably related to the filling or occluding of in vitro cavities for the purpose of repair. Ans. 9. Vernon recognizes the need for occlusion or cavity filling in repair of the vasculature. Therefore the disclosure of Studer reasonably commends itself to one of ordinary skill contemplating such repairs. Appellant further argues that there is no motivation to combine these reference teachings. Repl. 2. However, the Supreme Court has stated that a rigid and mandatory requirement for motivation to combine is incompatible with its precedent concerning obviousness. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 402 (2007).

On pages 20 and 21 of the Brief, Appellants argue that the provisional application of Vernon does not disclose any examples which contain PEGDA. There is no requirement for a reference to provide specific examples. A reference need only be enabling and describe the applicant's claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention. *In re Paulsen,* 30 F.3d 1475, 1479 (Fed. Cir. 1994).

Appellants argue that the results are not predictable when the teachings of Vernon and Studer are combined. App. Br. 27. We also disagree with this argument. It seems clear to us that the composition of Studer would behave entirely predictably when used in a different in vitro cavity than a cavity between vertebrae. Appellants have pointed to no factors that would preclude such predictability.

With respect to claims 42, 52, and 56-63, we are in agreement with the Examiner when she argues that the ratio of pentaerythritol and PEGDA is a matter of routine optimization where as here, the characteristics of the compounds and their interaction are general conditions known in the prior art. Ans. 10. Appellants' only argument with respect to the Examiner's conclusion of routine optimization is to argue that the proportions of pentaerythritol and PEGDA disclosed in the provisional application are outside the ranges claimed. This is not responsive to the Examiner's conclusion that one of ordinary skill could routinely optimize this ratio based on knowledge in the art. Accordingly, in our view, the prior art renders the subject matter of claim 42, 52, and 56-63 prima facie obvious.

DECISION

The rejection of claims 31-33, 35-38, 40-46, 48-54 and 56-65 under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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